

**Notice of Allowability**

Application No.

10/051,735

Examiner

Phylesha L. Dabney

Applicant(s)

HYRE ET AL.

Art Unit

2646

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1,10,15,16,21-22,27-29,37 and 38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/15/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

### DETAILED ACTION

This action is in response to the amendment filed on 24 October 2005 in which claims 1, 10, 15-16, 21-22, 27-29, 37-38 are pending.

#### *Examiner's Amendment*

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Jensen on 15 November 2005.

The application has been amended as follows:

#### In The Specification

Please see the attached pages 5-6.

#### In The Claims

Claim 15 (currently amended) An apparatus of Claim 10, with the magnetic field intensity between the gaps regions of lower intensity and those outside ~~the main gap region~~ these regions being of substantially similar in size and/or magnitude.

Claim 16 (currently amended) An apparatus of Claim 10, with the magnetic field intensity between the gaps regions of greater intensity and those outside ~~the main gap region~~ these regions being of substantially different in size and/or magnitude.

Claim 37 (currently amended). An apparatus of Claim 10, with ~~an~~ the inter-gap magnetic field intensity between the regions of greater intensity less than the ~~gap magnetic field intensity~~ regions of greater intensity.

Claim 38 (currently amended). An apparatus of Claim 10, with a magnetic field intensity outside the ~~main-gap-region~~ regions of greater intensity less than the ~~gap magnetic field intensity~~ regions of greater intensity.

### ***Reasons For Allowance***

The following is an examiner's statement of reasons for allowance:

The instant application is deemed to be directed to a nonobvious improvement over the invention patented in Patent No. 4,980,921. The improvement comprises an electro-acoustic transducer which has field gaps including two or more axially displaced regions of greater intensity formed in the top plate and central pole, such that a magnetic flux is realized in these regions in substantially the same directions, separated and surround by regions of lower intensity, as substantially described and connected with the other functional language in the recited claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L. Dabney whose telephone number is 571-272-7494. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 8, 2005



PLD



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**

Art Unit: 2646

Amendment to the Specification  
Replace page 6 with the following:

6

Summary of the Invention

With the above-noted prior art in mind, it is an object of the present invention to provide an electro-mechanical transducer capable of producing a more linear response over a larger excursion and wider bandwidth with lower distortion, comprising a magnetic assembly, producing a magnetic field having two or more axially displaced regions of greater intensity (generally referred to as a "gaps"), being substantially similar in size, magnitude and direction and separated by and surrounded by regions of lower intensity magnetic field. The assembly is supported by a frame which is either separate or integral and the magnetic assembly includes an electrically conductive and mobile coil disposed in the magnetic field and capable of moving through the magnetic field, and an acoustic radiating diaphragm is attached to and moves with the coil member and the diaphragm is mounted or sealed to the frame to reduce or eliminate air leaks, and either with or without an additional suspending element secured to the frame to provide additional restorative and/or centering force.

It is another object of the present invention to provide an electro-mechanical transducer, wherein the magnetic field, having two or more axially displaced regions of greater intensity, and being similar in size, magnitude and direction, and separated by regions of lower intensity magnetic field which may be of substantially different sized and/or magnitude field includes a central pole, back plate, magnetic material, and top plate and wherein the central pole and the top plate include opposing grooves past which the coil moves to transduce sound.

It is another object of the present invention to provide a non-audio electro-mechanical transducer based upon the same principles, wherein a magnetic field is created having two or more axially displaced regions of greater intensity past which current-carrying conductor moves.